UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,049	09/28/2006	Vincent Zimmer	42P16112	3959

45209 7590 07/15/2010		
INTEL/BSTZ		
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP		
1279 OAKMEAD PARKWAY		
SUNNYVALE, CA 94085-4040		

EXAMINER
DAS, CHAMELI

ART UNIT	PAPER NUMBER
2192	

MAIL DATE	DELIVERY MODE
07/15/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/561,049	ZIMMER ET AL.
Office Action Summary	Examiner	Art Unit	
	CHAMELI C. DAS	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 September 2006</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-30</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16 and 18-30</u> is/are rejected.

7)☒ Claim(s) <u>17</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>15 December 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/16/09, 7/13/09, 2/5/07</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20100712

DETAILED DESCRIPTION

1.   Claims 1-30 are pending.

Priority

2.   Acknowledgment is made of applicant's claim for foreign priority under 35
U.S.C. 119(a)-(d).

Information Disclosure Statement

3.   The information disclosure statement (IDS) submitted on 12/16/09, 7/13/09 and
02/05/07. The submission is in compliance with the provisions of 37 CFR 1.97.
Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

4.   The drawings filed on 12/15/05 have been accepted by the Examiner.

Examiner's Notes

5.   Examiner cites particular columns and line numbers in the references as applied
to the claims below for the convenience of the applicant. Although the specified citations
are representative of the teachings in the art and are applied to the specific limitations
within the individual claim, other passages and figures may apply as well. It is
respectfully requested that, in preparing responses, the applicant fully consider the
references in entirety as potentially teaching all or part of the claimed invention, as well
as the context of the passage as taught by the prior art or disclosed by the examiner.

Oath/Declaration

6.   The applicant's oath/declaration has been reviewed by the examiner and is found

to conform to the requirements prescribed in 37 C.F.R. 1.63.

Specification

7.   The disclosure is objected to because it contains an embedded hyperlink

and/or other form of browser-executable code on [0005] and [0074]. Applicant is

required to delete the embedded hyperlink and/or other form of browser-executable

code. See MPEP § 608.01.

Claim Objections

8.   Claim 19 is objected to because of the following informalities:

Claims 19 at line 5, the [[..]] should be deleted after "variable data".

Appropriated correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

9.   Claims 18-22 are rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

Claim 18 and 22 recite the limitation "a machine-readable medium". According to

the present specification [0082], the "machine-readable medium" could be propagated

signals (e.g., carrier waves, infrared signals, digital signals, etc.). The signal is not a

statutory medium and thus claims 18 and 22 are rejected under 35 USC 101.

Claims 19-21 depend on claim 18 and rejected under 35 USC 101.

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 5, 7-10, 12, 18-23, 27-28, and 30 are rejected under 35

U.S.C. 103(a) as being unpatentable over Rahman (US 5901310) and further in view of

Delaney (US 6622302)

As per claim 1, Rahman discloses:

- compressing firmware via firmware to produce compressed firmware (Fig 4, reference

elements 103, 104, 106, 108) and (Fig 5, 134), (col 2 lines 7-15) and (col 5 lines 35-

37);

- storing the compressed firmware in a firmware storage device (Abstract col 1 lines 48-

50).

As per claim 1, Rahman discloses BIOS is a firmware stored in ROM. Rahman does not

specifically disclose the firmware contains the variable data. However, in an analogous

art Delaney (US6622302) discloses that Firmware contains the variables (Delaney, col

1 lines 18-22). Therefore, it would have been obvious to one of the ordinary skill in the

art to incorporate the teaching of Delaney into the method of Rahman. The

modification would be obvious because one of the ordinary skill in the art would be

motivated to implement an intelligent I/O device management and in particular related to

improvements to techniques and structure for managing the upgrade of an I/O
subsystem controller firmware.

**As pre claim 2, the rejection of claim1 is incorporated and further Rahman
discloses:**

- retrieving the compressed firmware from firmware storage device (Rahman,
  Abstract); and decompressing the compressed firmware (Rahman Abstract, col 1
  lines 48-60). Delaney discloses the variable data is inside the firmware (Delaney,
  col 1 lines 18-22).

-

- **As pre claim 5, the rejection of claim 1 is incorporated and further Rahman
  discloses:**

- storing indicia with the compressed firmware data to indicate that the data are
compressed (col 5 lines 5-10), (col 4 lines 6-10). Delaney discloses the firmware
contains the variable data (col 1 lines 18-22). Delaney discloses that Firmware contains
the variables (Delaney, col 1 lines 18-22).

**As pre claim 7, the rejection of claim 1 is incorporated and further Rahman
discloses**

- further comprising providing an interface to enable an operating system runtime
component to access compressed firmware variable data (col 2 lines 66-67- col 31-10).

**As pre claim 8, the rejection of claim 1 is incorporated and further Rahman
discloses**

- further comprising encrypting the firmware data before or after it is compressed to convert the firmware data into a compressed and encrypted form (Abstract, lines 12-15), (col 2 lines 7-14), where "Compression techniques using both run-length encoding" clearly shows encrypting as claimed. Delaney discloses that Firmware contains the variables (Delaney, col 1 lines 18-22).

As claim 9, Rahman discloses

- store a first firmware (Abstract, col 4 lines 62-67);

determining if a compressor is available for compressing the first firmware (col 3 lines 43-65);

and employing the compressor if it is available to compress the first firmware (col 3 lines 43-65 - col 4 lines 1-10);

- and store it in a firmware storage device (Abstract), otherwise storing the first firmware in an uncompressed form in the firmware storage device if the compressor is not available (col 4 lines 6-32), where "it defaults to 0 when the character is not compressed" clearly shows it is an uncompressed form as claimed.

Rahman discloses BIOS is a firmware stored in ROM. Rahman does not specifically disclose the firmware contains the variable data and receiving a request to store the firmware. However, in an analogous art Delaney (US6622302) discloses receiving a request to store the firmware (Delaney col 1 lines 35-48) and Firmware contains the variables (Delaney, col 1 lines 18-22). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Delaney into the method of Rahman. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement an intelligent I/O device management and in particular related to improvements to techniques and structure for managing the upgrade of an I/O subsystem controller firmware.

As per claim 10 the rejection of claim 9 is incorporated and further Rahman discloses:

- store a second firmware (Abstract, col 4 lines 62-67);

- determining the compressor is no longer available; and storing the second firmware in the firmware storage device in an uncompressed form (col 4 lines 6-32).

Rahman discloses BIOS is a firmware stored in ROM. Rahman does not specifically disclose the firmware contains the variable data and receiving a request to store the firmware. However, in an analogous art Delaney (US6622302) discloses receiving a request to store the firmware (Delaney col 1 lines 35-48) and Firmware contains the variables (Delaney, col 1 lines 18-22) . Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Delaney into the method of Rahman. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement an intelligent I/O device management and in particular related to improvements to techniques and structure for managing the upgrade of an I/O subsystem controller firmware.

As per claim 12 Rahman discloses

- in response to a computer system power-on or reset event, scanning a firmware storage device in the computer system for uncompressed firmware that are stored in an uncompressed form (col 3 lines 33-37); converting the uncompressed firmware to a compressed form (col 2 lines 7-20). As per claim 1, Rahman discloses BIOS is a firmware stored in ROM. Rahman does not specifically disclose the firmware contains the variable data. However, in an analogous art Delaney (US6622302) discloses that Firmware contains the variables (Delaney, col 1 lines 18-22). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Delaney into the method of Rahman. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement an intelligent I/O device

management and in particular related to improvements to techniques and structure for managing the upgrade of an I/O subsystem controller firmware.

As per claim 18, Rahman discloses:

comprising: a machine-readable medium on which instructions are stored, which when executed facilitate storage of firmware data by performing operations including: store firmware variable data (Abstract, col 4 lines 62-67);

- compressing the firmware e data to produce compressed firmware data (col 3 lines 43-65 - col 4 lines 1-10);

and storing the compressed firmware data in a firmware storage device (Abstract).

Rahman discloses BIOS is a firmware stored in ROM. Rahman does not specifically disclose the firmware contains the variable data and receiving a request to store the firmware. However, in an analogous art Delaney (US6622302) discloses receiving a request to store the firmware (Delaney col 1 lines 35-48) and Firmware contains the variables (Delaney, col 1 lines 18-22) . Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Delaney into the method of Rahman. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement an intelligent I/O device management and in particular related to improvements to techniques and structure for managing the upgrade of an I/O subsystem controller firmware.

Claim 19 is rejected under the reason set forth in connection of the rejection of claim 2 above.

As per claim 20 the rejection of claim 19 is incorporated and further Rahman discloses:

- wherein the instructions comprise firmware (Abstract, col 4 lines 63-67).

As per claim 21 the rejection of claim 20 is incorporated and further Rahman discloses:

- wherein the article comprises flash memory (col 4 lines 63-67).

Claim 22 is an article of manufacture claim corresponding to the method claim 9 and rejected under the same reason set forth in connection of the rejection of claim 9 above and further Rahman discloses a machine-readable medium on which instructions are stored, which when executed (Rahman Abstract, col 4 lines 63-67)

As per claim 23 the rejection of claim 22 is incorporated and further Rahman discloses:

- wherein the article comprises flash memory (col 4 lines 63-67).

As per claim 27, Rahman discloses:

 - a motherboard; a processor, coupled to the motherboard; volatile memory, coupled to the motherboard; and a boot firmware device, coupled to the motherboard and comprising flash memory having firmware components stored therein including a compressor, the firmware components comprising instructions that when executed by the processor effectuate storage of firmware variables by performing operations including (Abstract, col 2 lines 45-58):

- publishing an interface (Fig 1, col 2 lines 45-52);

- store a firmware via the interface (Abstract, col 4 lines 62-67);

- determining if a compressor is available for compressing the firmware (col 3 lines 43-65);

- and employing the compressor if it is available to compress the first firmware (col 3 lines 43-65 - col 4 lines 1-10);

- and store it in a firmware storage device (Abstract), otherwise storing the firmware in an uncompressed form in the boot firmware device if the compressor is not available (col 4 lines 6-32), where "it defaults to 0 when the character is not compressed" clearly shows it is an uncompressed form as claimed.

Rahman discloses BIOS is a firmware stored in ROM. Rahman does not specifically disclose the firmware contains the variable data and receiving a request to store the firmware. However, in an analogous art Delaney (US6622302) discloses receiving a request to store the firmware (Delaney col 1 lines 35-48) and Firmware contains the variables (Delaney, col 1 lines 18-22) . Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Delaney into the method of Rahman. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement an intelligent I/O device management and in particular related to improvements to techniques and structure for managing the upgrade of an I/O subsystem controller firmware.

As pre claim 28, the rejection of claim 27 is incorporated and further Rahman discloses: decompressing compressed firmware data (Rahman Abstract, col 1 lines 48-60).

As pre claim 30, the rejection of claim 28 is incorporated and further Rahman discloses

-   wherein execution of the instructions further performs the operations of read a firmware data stored in the boot firmware device; (col 2 lines 53-58);

-    determining if the firmware variable is stored in a compressed or uncompressed form; and decompressing the firmware variable to produce an uncompressed firmware variable and providing the uncompressed firmware to the requester if the firmware variable is stored in a compressed form, otherwise providing the firmware variable if the firmware variable is stored in an uncompressed form (col 3 lines 30-67 – col 4 lines 1-27).

-   As per claim 30 Rahman discloses to read a firmware. Rahman does not
    specifically disclose receiving a request from a requester to read. However it is
    common knowledge in the art to receive a request for any function. The
    modification would be obvious because one of the ordinary skill in the art would
    be motivated to develop the system as a user-friendly interface.

11.   Claims 3-4, 13-14 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Rahman (5901310) and further in view of Delaney (US6622302) and

Brannock (US 20030066062)

**As pre claim 3, the rejection of claim 1 is incorporated and further Rahman
disclosed**

 - wherein the compressed firmware data comprise original firmware data (Fig 4,
reference elements 103, 104, 106, 108) and (Fig 5, 134), (col 2 lines 7-15) and (col 5
lines 35-37);

- further comprising updating the original firmware data with new firmware variable data
by performing operations including: storing the new firmware data in the firmware
storage device in one of a compressed or uncompressed form (col 5 lines 5-10), (col 4
lines 6-10). Delaney discloses the firmware contains the variable data (col 1 lines 18-
22).

Neither Rahman nor Delaney disclose marking the original firmware data as deleted.
However, in the analogous art Brannock (US 20030066062) discloses marking the
firmware as deleted (Brannock, [0029], [0047]).

Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Brannock into the method of Rahman and Delaney. The modification would be obvious because one of the ordinary skill in the art would be motivated to update the firmware volume efficiently.

As pre claim 4, the rejection of claim 3 is incorporated and further Rahman discloses

- wherein the original and new firmware data are stored in a memory block of the firmware storage device, (Abstract);

- further comprising coalescing the data in the firmware block by performing operating including: storing an image of the memory block (Abstract col 2 lines 58-62); Rahman discloses compression (Rahman, col 5 lines 5-10), (col 4 lines 6-10). Delaney discloses the firmware contains the variable data (col 1 lines 18-22).

Neither Rahman nor Delaney disclose, however Brannock discloses: erasing the memory block (Brannock, Abstract, [0029]); marked as deleted in the image of the memory block [0029] and writing them back to the memory block while skipping any marked as deleted [0030], [0035]. Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Brannock into the method of Rahman and Delaney. The modification would be obvious because one of the ordinary skill in the art would be motivated to update the firmware volume efficiently.

As per claim 13 the rejection of claim 12 is incorporated and further Rahman discloses

- wherein the uncompressed firmware variables are converted to a compressed form by performing operations including: copying an image of a firmware memory block in which the uncompressed firmware are stored (col 4 lines 48-52); compressing each uncompressed variable (Col 3 lines 38-67- col 4 lines 1-10); and writing the compressed back to the firmware memory block (Abstract). Neither Rahman nor Delaney disclose, however Brannock discloses: erasing the memory block (Brannock, Abstract, [0029]);

marked as deleted in the image of the memory block [0029] and writing them back to
the memory block while skipping any marked as deleted [0030], [0035]. Therefore, it
would have been obvious to one of the ordinary skill in the art to incorporate the
teaching of Brannock into the method of Rahman and Delaney. The modification
would be obvious because one of the ordinary skill in the art would be motivated to
update the firmware volume efficiently.

**As per claim 14 the rejection of claim 13 is incorporated and further Rahman
discloses**

- further comprising: scanning the image for any compressed firmware variables;
  and writing the compressed data back to the firmware memory block (col 2 lines
  7-15) and (col 1 lines 5-6).

12.   Claims 15-16, 24-26, 29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Rahman (US 5901310) and further in view of Delaney (US6622302)

and Depew et al hereinafter Depew, (US 20030208650)

As per claim 15 Rahman discloses

- storing a first converter in a firmware storage device; storing a first deconverter in
firmware storage device (Abstract);

determining if the first converter is available; and storing firmware in a first converted
form if the first converter is determined to be available, otherwise storing the firmware
variables in a unconverted form (col 3 lines 30-65 – col 4 lines 1-22). As per claim 1,
Rahman discloses BIOS is a firmware stored in ROM. Rahman does not specifically
disclose the firmware contains the variable data. However, in an analogous art Delaney

(US6622302) discloses that Firmware contains the variables (Delaney, col 1 lines 18-22). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Delaney into the method of Rahman. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement an intelligent I/O device management and in particular related to improvements to techniques and structure for managing the upgrade of an I/O subsystem controller firmware.

Neither Rahman nor Delaney disclose fault-tolerant and non-fault-tolerant portions of a memory. However, in the analogous art Depew discloses fault-tolerant and non-fault-tolerant portions of a memory (Depew, [0004], [0009]). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Depew into the method of Rahman and Delaney. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement a system that a memory read is taken from the active board. In this way, if one board fails, the other board still has all of the needed data (i.e., no data is lost) and the system can continue operating. If desired, the failed memory can be replaced, if at all, at a convenient time that has little impact on the organization's business activity. [0008]

As per claim 16 the rejection of claim 15 is incorporated and further Rahman discloses:

- accessing firmware data stored in the first converted form with the first decompressor (Rahman, col 1 lines 46-60 and col 2 lines 20-25).

As per claim 24 the rejection of claim 23 is incorporated and further Rahman discloses:

- wherein a portion of the instructions comprise a compressor employed for compressing firmware (Rahman, Abstract) and the flash memory in which the compressor is stored (Abstract). Rahman does not specifically disclose the firmware

contains the variable data. However, in an analogous art Delaney (US6622302) discloses Firmware contains the variables (Delaney, col 1 lines 18-22).

Neither Rahman nor Delaney disclose non-fault-tolerant portions of a memory. However, in the analogous art Depew discloses fault-tolerant and non-fault-tolerant portions of a memory (Depew, [0004], [0009]). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Depew into the method of Rahman and Delaney. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement a system that a memory read is taken from the active board. In this way, if one board fails, the other board still has all of the needed data (i.e., no data is lost) and the system can continue operating. If desired, the failed memory can be replaced, if at all, at a convenient time that has little impact on the organization's business activity. [0008].

Claim 25 is an article of manufacture claim corresponding to the method claim 10 and rejected under the same reason set forth in connection of the rejection of claim 10 above.

As per claim 26 the rejection of claim 23 is incorporated and further Rahman discloses:

- wherein a portion of the instructions comprise a decompressor employed for decompressing firmware (Rahman, Abstract) and the flash memory in which the decompressor is stored (Abstract). Rahman does not specifically disclose the firmware contains the variable data. However, in an analogous art Delaney (US6622302) discloses Firmware contains the variables (Delaney, col 1 lines 18-22) .

Neither Rahman nor Delaney disclose fault-tolerant portions of a memory. However, in the analogous art Depew discloses fault-tolerant and non-fault-tolerant portions of a memory (Depew, [0004], [0009]). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Depew into the method of Rahman and Delaney. The modification would be obvious because one of the ordinary skill in

the art would be motivated to implement a system that a memory read is taken from the active board. In this way, if one board fails, the other board still has all of the needed data (i.e., no data is lost) and the system can continue operating. If desired, the failed memory can be replaced, if at all, at a convenient time that has little impact on the organization's business activity.   [0008].

As pre claim 29, the rejection of claim 28 is incorporated and further Rahman discloses:

- wherein the compressor is stored in a e boot firmware device (Abstract),and the decompressor is stored in a non-updateable block of the boot firmware device (Abstract).

Rahman does not specifically disclose the firmware contains the variable data. However, in an analogous art Delaney (US6622302) discloses Firmware contains the variables (Delaney, col 1 lines 18-22).

Neither Rahman nor Delaney disclose fault-tolerant portions of a memory. However, in the analogous art Depew discloses fault-tolerant and non-fault-tolerant portions of a memory (Depew, [0004], [0009]). Therefore, it would have been obvious to one of the ordinary skill in the art to incorporate the teaching of Depew into the method of Rahman and Delaney. The modification would be obvious because one of the ordinary skill in the art would be motivated to implement a system that a memory read is taken from the active board. In this way, if one board fails, the other board still has all of the needed data (i.e., no data is lost) and the system can continue operating. If desired, the failed memory can be replaced, if at all, at a convenient time that has little impact on the organization's business activity.   [0008].

13.   Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Rahman (US 5901310) and further in view of Delaney (US 6622302)

and O'Neill (US 20030223646)

As per claim 6, Rahman discloses compressed firmware (Rahman, Abstract).

Delaney discloses the firmware contains variable (Delaney, col 1 lines 18-22). Neither

Rahman nor Delaney disclose the storage is a 2-tuple format.

However, in the analogous art O'Neill discloses the storage is the two-tuple format

comprises metadata, data and compression function. (O'Neill, [0009]).

O'Neill does not specifically disclose 2-tuple format of <M'_i, $C(B_i)$>, wherein

M'_i comprises metadata corresponding to an ith tuple, B_i comprises data

corresponding to the ith tuple, and C represents a compression function. The

modification would be obvious because one of the ordinary skill in the art would be

motivated to store the data in the data storage efficiently.

Allowable Subject Matter

14.   Claim 17 is objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

Conclusion

15.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chameli Das whose telephone number is 571-272-3696.

The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 3:30 P.M and 7:30 P.M – 9:30 P.M (E.T).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Tuan Dam can be reached at 571-272-3695. The fax number for this group is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (in the USA or Canada) or (571) 272-1000.

/CHAMELI C. DAS/

Primary Examiner, Art Unit 2192

Dated: 7/12/10